

WHAT IS CLAIMED IS:

1. A method of allocating data sites of a storage device based on quality of the data sites, the method comprising:
 - determining the quality of the data sites of the storage device by
 - determining attribute information for the data sites; and
 - allocating certain of the data sites as spare data sites, based on their quality, for use in accommodating one or more defects in the storage device.
2. The method of claim 1, wherein the determining comprises:
 - checking the data sites utilizing, at least in part, an error correction code (ECC);
 - determining the number of bits corrected utilizing, at least in part, the ECC for each respective data site; and
 - using the number of corrected bits for a particular data site to determine the quality of that data site.
3. The method of claim 2, wherein the allocating comprises:
 - allocating as spare data sites those data sites having a relatively high number of corrected bits; and
 - allocating as non-spare data sites those data sites having a relatively low number of corrected bits.
4. The method of claim 1, wherein the determining comprises:
 - applying programming pulses to program the data sites;
 - determining the number of programming pulses needed for each respective data site; and
 - using the number of programming pulses for a particular data site to determine the quality of that data site.
5. The method of claim 4, wherein the allocating comprises:

allocating as spare data sites those data sites requiring a relatively high number of programming pulses; and

allocating as non-spare data sites those data sites requiring a relatively low number of programming pulses.

6. The method of claim 4, wherein the storage device is an NROM device; further wherein the applying comprises applying programming pulses to program data sites of the NROM device.
7. The method of claim 1, wherein the determining comprises:
determining read/write speeds associated with the data sites; and
using the read/write speed for a particular data site to determine the quality of that data site.
8. The method of claim 7, wherein the allocating comprises:
allocating as spare data sites those data sites having a relatively low read/write speed; and
allocating as non-spare data sites those data sites having a relatively high read/write speed.
9. The method of claim 1, wherein the determining comprises:
determining access speeds associated with the data sites; and
using the access speed for a particular data site to determine the quality of that data site.
10. The method of claim 9, wherein the allocating comprises:
allocating as spare data sites those data sites having a relatively low access speed; and
allocating as non-spare data sites those data sites having a relatively high access speed.

11. The method of claim 1, further comprising building a sparing table based on the allocating.
12. The method of claim 11, in combination with remapping data sites of the storage device, using the sparing table, to accommodate the one or more defects in the storage device.
13. The method of claim 1, further comprising assigning a quality value to each data site, wherein the allocating comprises comparing the quality value for each data site to a threshold value to determine whether the respective data site is allocated as a spare data site.
14. An electronic system, comprising:
 - a host; and
 - a storage device operably couplable to the host and having data sites for storing data;wherein at least one of the storage device and the host maintains information regarding a physical property of the data sites, to determine which data sites are to be used as spare data sites in accommodating one or more defects in the storage device.
15. The system of claim 14, wherein the storage device comprises magnetic random access memory (MRAM).
16. The system of claim 14, wherein the storage device comprises error correction code (ECC) protected media; further wherein the physical-property information comprises ECC data.
17. The system of claim 14, wherein the storage device comprises nitride read-only memory (NROM); further wherein the physical-property information comprises programming pulse data.

18. The system of claim 14, wherein the storage device comprises flash ROM; further wherein the physical-property information comprises read/write speed data.
19. The system of claim 14, further comprising a user interface adapted to receive a threshold input from a user of the system, wherein the system compares the threshold input and the physical-property information to determine which data sites are to be used as spare data sites.
20. The system of claim 14, wherein the storage device maintains the physical-property information and is adapted to report the information to the host.
21. The system of claim 14, wherein the physical-property information comprises a data-site quality table.
22. A storage device operably couplable to a host and having data sites for storing data, the data sites comprising spare data sites for accommodating one or more defects in the storage device, wherein the storage device maintains attribute information for the data sites such that at least one spare data site is reallocable as a non-spare data site in view of threshold information received from the host.
23. The storage device of claim 22, wherein the attribute information is based on data-site quality information.
24. The storage device of claim 22, wherein the attribute information comprises at least one of error correction code data, programming-pulse data, read/write speed data, and access-time data.

25. The storage device of claim 22, in combination with a testing controller operably connectable to the storage device for determining the attribute information.
26. The storage device of claim 22, wherein the attribute information comprise a quality table.
27. An electronic system, comprising:
means for determining the quality of data sites of a storage device; and
means for allocating certain of the data sites as spare data sites, based on their quality, for use in accommodating one or more defects in the storage device.
28. One or more computer-readable media having stored thereon a computer program that, when executed by a processor, causes data-site allocation according to the following method:
determining the quality of the data sites of the storage device by determining attribute information for the data sites; and
allocating certain of the data sites as spare data sites, based on their quality, for use in accommodating one or more defects in the storage device.
29. Media according to claim 28, wherein the determining comprises:
checking the data sites utilizing, at least in part, an error correction code (ECC);
determining the number of bits corrected utilizing, at least in part, the ECC for each respective data site; and
using the number of corrected bits for a particular data site to determine the quality of that data site.
30. Media according to claim 28, wherein the determining comprises:

determining read/write speeds associated with the data sites; and
using the read/write speed for a particular data site to determine the
quality of that data site.